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Method and apparatus for displaying information in a gaming machine

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(71) Applicant(s)
William Clarence Campbell .

(72) Inventor(s)
William Clarence Campbell

(74) Agent/Attorney
GRIFFITH HACK,GPO Box 4164,SYDNEY NSW 2001

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ABSTRACT

Apparatus for displaying information in a gaming machine includes means for displaying a reference position in the field of vision of a user of the machine, and means for arranging the information around the reference position in a manner such that the information can be sequentially perceived by the user.

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ORIGINAL

COMPLETE SPECIFICATION

STANDARD PATENT

Invention Title: METHOD AND APPARATUS FOR DISPLAYING INFORMATION IN A GAMING MACHINE

The following statement is a full description of this invention, including the best method of performing it known to us:

GH REF: P24030-B/RPW

METHOD AND APPARATUS FOR DISPLAYING INFORMATION IN A GAMING MACHINE

Field of the Invention

The present invention relates to methods and apparatus for displaying information in a gaming machine. For example, the invention can find application with poker machines, slot machines, card-game machines, image-game machines, etc. It should be appreciated, however, that the invention is not limited to such fields of use.

Background Art

Gaming machines employ standardised techniques for displaying information such that various winning sequences provide users of these gaming machines with capital pay out (or other types of prize winnings). With poker machines, in order to maximise profit intake for a machine, but also to provide users with greater chances of winning, various overlays of sequences (combinations) on a displayed result are employed.

For example, poker machines often have 3 or 5 "spinning wheels", with images or symbols on these spinning wheels. Modern machines simulate these spinning wheels electronically and display them graphically on a visual display unit. A user "wins" when predetermined combinations of symbols on a given number of wheels line up, most commonly linearly across the wheels. Users may also select to draw winnings from upper and lower symbol rows, and diagonal and other combinations of symbol alignments.

As the winning sequences become more complex, it becomes extremely difficult for users to interpret and understand the information, particularly to understand whether or not they have won (or what they have won) with a particular sequence. In this regard, it would be advantageous to provide more easily ascertainable and understandable forms of presenting information in gaming

machines, or at the very least to provide an alternative to existing forms of information display.

Summary of the Invention

In a first aspect the present invention provides apparatus for displaying information in a gaming machine including:

- means for displaying a reference position in the field of vision of a user of the machine; and
- means for arranging the information around the reference position in a manner such that the information can be sequentially perceived by the user;

wherein the information is displayed in one or more generally annular 2-D fields, the or each field being concentric with the reference position.

In a second aspect the invention provides a method for displaying information in a gaming machine including the steps of:

- presenting a reference position to the field of vision of a user of the machine; and
- arranging the information around the reference position in one or more generally annular 2-D fields such that the or each field is concentric with the reference position and such that the information can be sequentially perceived by the user.

With the method and apparatus of the present invention, by employing a common reference position, multiple sequences of information can be presented and grasped by a user of the gaming apparatus both readily and intuitively.

Preferably the information is viewed sequentially from the reference position and preferably includes sign(s) and/or symbol(s) that can be arranged sequentially with reference to the reference position. The means for arranging the information can be mechanical and/or

electronic.

The means for displaying preferably includes a display screen that is oriented towards the user in use and the reference position is preferably a point that is generally centrally aligned with respect to the display screen.

In one form of information display, it is preferred that the information is displayed in two or more generally annular 2-D fields, all concentric with the reference position, such that moving outwardly from the reference position, each successive annular field surrounds a previous annular field. In this regard the plurality of fields can combine to define a generally continuous circular 2-D object in the field of vision of the user, with the object being divided into a number of sectors or segments by lines that emanate from the reference position, the lines in turn dividing each field into the same number of segments.

Preferably the reference position is a point and the lines are straight lines that emanate from the point. In this regard, it is also preferred that, at the point, each line subtends the same angle with adjacent lines on either side thereof.

It is also preferred that each field is independently and relatively rotatable about the reference position. This can be achieved through electronic simulation of rotation, through mechanical rotation of annular "wheels", or by an apparent rotation (see description below).

Preferably after rotation of one or more of the fields, each segment of a field can be positioned adjacent to a different segment, and/or adjacent to two different segments on either side thereof, with reference to the position of the field prior to the rotation.

It is also preferred that information displayed to a user in each segment can be individually altered using electronic and/or mechanical means.

When the information is displayed, the symbols and/or signs arranged in the segments can combine to define predetermined sequences, including:

(1) sequences along lines extending out from the

reference position, and

(2) sequences along circles (or ellipses, polygons etc) centred on the reference position.

In a second form of information display, when the information is provided within one generally annular 2-D field, the field is divided into sectors, with at least the information in each sector being relatively moveable and/or changeable with respect to the reference position and relative to each other sector.

In this alternative mode, a total image can be displayed within the annular field with a different part of the image being located in each respective sector.

Brief Description of the Drawings

Notwithstanding any other forms which may fall within the scope of the present invention, preferred embodiments of the invention will now be described, by way of example only, with reference to the accompanying drawings in which:

Figure 1 shows a first schematic representation of information for use in a gaming machine;

Figure 2 shows a second schematic representation of information for use in a gaming machine; and

Figure 3 shows a third schematic representation of information for use in a gaming machine.

Modes for Carrying out the Invention

Referring to Figure 1, a central or regional point CP for a large circle LC is shown. This two-dimensional graphic representation can be arranged or reproduced on a screen in a gaming machine either electronically (eg. using computer generated graphics) or mechanically. The gambling machines employing this information display can include poker machines, slot machines, card and image-game machines, etc; (not shown). The mechanical reproduction can employ a plurality of annular shaped wheels, etc.

Emanating outwardly from the central point CP are a plurality of lines L1, L2, etc which divide the large circle LC into a plurality of sectors S1, S2, etc, (of the same number). The large circle LC is also segmented by a

series of progressively smaller circles C1, C2, C3 etc all centred on the central point CP. Thus, a

plurality of individual segments are defined within the large circle LC, for example, a segment is bound by circles C1 and C2 and lines L1 and L2 (which in Figure 1 corresponds to the shaded region with the number 8 therein).

Each of these segments can contain, hold or have information embedded therein, for example, through electronic display, mechanical display or other means. A most usual type of information display involves symbol-type information (eg. such as playing card symbols).

In the large circle of Figure 1, there are also a number of "fields" of information. These fields can include sector fields of information (ie. all information between, for example, lines L1 and L2 (ie. in sector S2)); and annular fields of information, for example, all information between circles C3 and C4.

This display of information allows a gaming machine to be configured to manipulate the information in various ways. The annular fields of information can each be individually rotated around the central point CP. For example, the annular field between the large circle LC and circle C1 can be rotated clockwise, whereas the annular field between the circles C1 and C2 can be rotated counter-clockwise etc. This rotation can be selected by the user or may be generated randomly within the gaming machine (using random sequence mechanical and/or electronic control configurations).

Alternatively, information in each sector can be moved around the central point CP. For example, all the information in sector S2 can be "flipped" across to eg. sector S7. Alternatively, the information in sector S2 can be moved (rotated) around central point CP (ie. in the two-dimensional plane of the large circle) to a given other sector. As another alternative, the information within a sector (or a given segment) can be individually "rotated" or "flipped" so that, for example, the information rotates on an imaginary electronic or

mechanical axis I (see sector S8) to provide new displays of information in each segment within that sector.

Furthermore, information in each individual segment can be individually changed with reference to every other segment. For example, the information in the segment bounded by lines L2, L3 and circles C1 and C2 (ie. the reference numeral 2 in sector S3) can be "flipped" (eg. over central point CP and into the corresponding segment in sector S8), or can be rotated around an axis I or randomly changed etc.

In a most preferred form of interpreting final displays of information, a user reads outwardly from the central point CP and within either a sector, or within an annulus as the case may be. For example, in Figure 1 the symbols used can correspond to a normal deck of 52 playing card symbols such that A = Ace, K = King, Q = Queen, J = Jack, etc. The various segments may then be shaded with appropriate colours, and additional symbols to denote Spades, Diamonds, Clubs or Hearts can also be employed. The game may then be the "poker" card game. In the presentation of information in Figure 1, when a user reads outwardly from central point CP and within a given sector, a number of results can be ascertained. For example, in sector S5, result 5 is 2 nines and 3 threes (ie. a "full house" in poker terms). In sector S8, result 8 is "4 aces". In sector S1, result 1 is a "straight", and possibly a "royal flush". The possibilities for information display are thus endless.

Where only five sectors are employed, the standard five card-hand result of poker can also be read in the annulus between two adjacent circles (see for example the configuration in Figure 2).

Referring to Figure 2, where like reference numerals have been employed to denote similar or like parts to Figure 1, a display of information is shown wherein the large circle LC is divided into five segments S1 through to S5 by five lines L1 through to L5. In the presentation of Figure 2, poker playing card symbols

together with other symbols such as a wheel symbol W, a gold symbol G, a free-play symbol E and a low-score symbol D are shown. (These symbols are similar to symbols used in more modern styles of poker machines).

The information can once again be rotated around the central point as described above with reference to Figure 1, and again different winning sequences around the central point CP can easily be read by a user with reference to the central point CP. For example, in sector S1, five wheel symbols W in a row (ie. in a linear arrangement with respect to the central point CP) are shown. This can correspond with a winning sequence in which the user of a gaming machine is awarded prizes, credits, coins etc. Also, in the annulus bounded by lines C2 and C3, a gold symbol G, wheel symbol W, a jack J, E symbol and a number 10 are shown. The user may be provided with options for each of these symbols to increase the chance of obtaining, for example, a "royal flush" A/K/Q/J/10 by individually altering a segment or segments etc. For example, the E symbol can correspond to a wild card and may simulate any symbol, and a wheel W may entitle the user to a free spin for that segment. Endless permutations are possible.

Referring to Figure 3, where like reference numerals are used to denote similar or like parts to Figures 1 and 2, the large circle LC is divided into ten sectors S1 through to S10 by ten lines L1 through to L10. In Figure 3, a graphical image (eg. the Sagittarian astrology symbol) is mounted within the large circle LC so that a portion of the symbol protrudes into every sector. In a similar manner, the sectors can be flipped, spun, rotated, etc with reference to the central point CP, and then the user can view the resultant symbol (and its deviation from the symbol shown in Figure 3) and points can be awarded, for example, on a proportional basis of intact representation etc.

Figures 1 to 3 show the circular presentation of information around a central regional reference point CP.

However, other forms of information presentation around a reference point can be employed. For example, the large circle may be replaced by an elliptical or ellipsoid representation. Alternatively, hexagonal, octagonal, pentagonal, triangular, square and other representations can be employed. The reference point need not necessarily be centred and can be offset as appropriate.

Also, Figures 1 to 3 show two-dimensional representations, but three-dimensional electronic and/or mechanical information display formats can also be produced around a reference region or point (eg. planetary displays of information). Usually, however, the two-dimensional representation is employed for its ease of reading by a user.

The display of information around a reference point readily facilitates the reading of a multiple number of results by a user of the game machine. For example, referring to Figure 1, the user may choose to highlight sectors S1, S5 and S8 for winning: (ie. to only obtain results in those sectors), in which case, with the results as displayed in Figure 1, the user would receive a large number of bonus points or credits (as the case may be). If, on the other hand, the user selected sector S10, S9 and S4, the user would only receive points for the "three 10s" result (in sector S10) and the "two pairs" result (in sector S9). Alternatively, the user may highlight various annuli and/or combinations of various sectors and annuli selecting one or more of either kind as appropriate.

This ease of information display also enables gambling machine operators to display a larger number of more easily interpretable winning sequences to potentially increase takings. In a gambling machine, highlights can also be performed through a debiting of credits (where credits correspond to coins) or other appropriate means. This system of debiting and crediting and awarding prizes can employ similar arrangements to the forms employed for existing gaming machines.

The preferred embodiments described above at least, provide users of gaming machines with a more intuitive and interpretive display of information. The users can readily see whether the desirable information lies in a sector or not or in an annulus or not, and various interesting displays and highlighting of that information can be employed.

Whilst the invention has been described with reference to a number of preferred embodiments, it should be appreciated that the invention can be embodied in many other forms.

CLAIMS:

1. Apparatus for displaying information in a gaming machine including:

- means for displaying a reference position in the field of vision of a user of the machine; and

- means for arranging the information around the reference position in a manner such that the information can be sequentially perceived by the user;

wherein the information is displayed in one or more generally annular 2-D fields, the or each field being concentric with the reference position.

2. A method for displaying information in a gaming machine including the steps of:

- presenting a reference position to the field of vision of a user of the machine; and

- arranging the information around the reference position in one or more generally annular 2-D fields such that the or each field is concentric with the reference position and such that the information can be sequentially perceived by the user.

3. Apparatus as claimed in claim 1 or a method as claimed in claim 2 wherein the information is sign(s) and/or symbol(s) that can be arranged sequentially with reference to the reference position.

4. Apparatus as claimed in claim 1 or claim 3, wherein the means for arranging the information is mechanical and/or electronic.

5. Apparatus as claimed in any one of claims 1, 3 or 4 wherein the means for displaying includes a display screen that is oriented towards the user in use and the reference position is a point that is generally centrally aligned with respect to the display screen.

6. Apparatus as claimed in any one of claims 1, 3, 4 or 5, or a method as claimed in claim 2 or claim 3, including two or more generally annular 2-D fields, all concentric with the reference position, such that moving outwardly from the reference position, each successive annular field surrounds a previous annular field.

7. Apparatus as claimed in claim 6 wherein the plurality of fields combine to define a generally continuous circular 2-D object in the field of vision of the user, with the object being divided into a number of sectors or segments by lines that emanate from the reference position, the lines in turn dividing each field into the same number of segments.

8. Apparatus as claimed in claim 7 wherein the lines are straight lines that emanate from a point and, at the point, each line subtends the same angle with adjacent lines on either side thereof.

9. Apparatus as claimed in any one of claims 6 to 8 wherein each field is independently and relatively rotatable about the reference position.

10. Apparatus as claimed in claim 9 wherein after rotation of one or more of the fields, each segment of a field can be positioned adjacent to a different segment, and/or adjacent to two different segments on either side thereof, with reference to the position of the field prior to the rotation.

11. Apparatus as claimed in any one of claims 3 or 4 to 10 when dependent on claim 3, wherein when the information is displayed, the symbols and/or signs arranged in the segments combine to define predetermined sequences, including:

(1) sequences along lines extending out from the reference position, and

(2) sequences along circles (or ellipses or polygons) centred on the reference position.

12. Apparatus as claimed in any one of claims 1 or 3 to 11, or a method as claimed in claim 2 or claim 3 wherein, when the information is provided within one annular 2-D field, it is divided into sectors with at least the

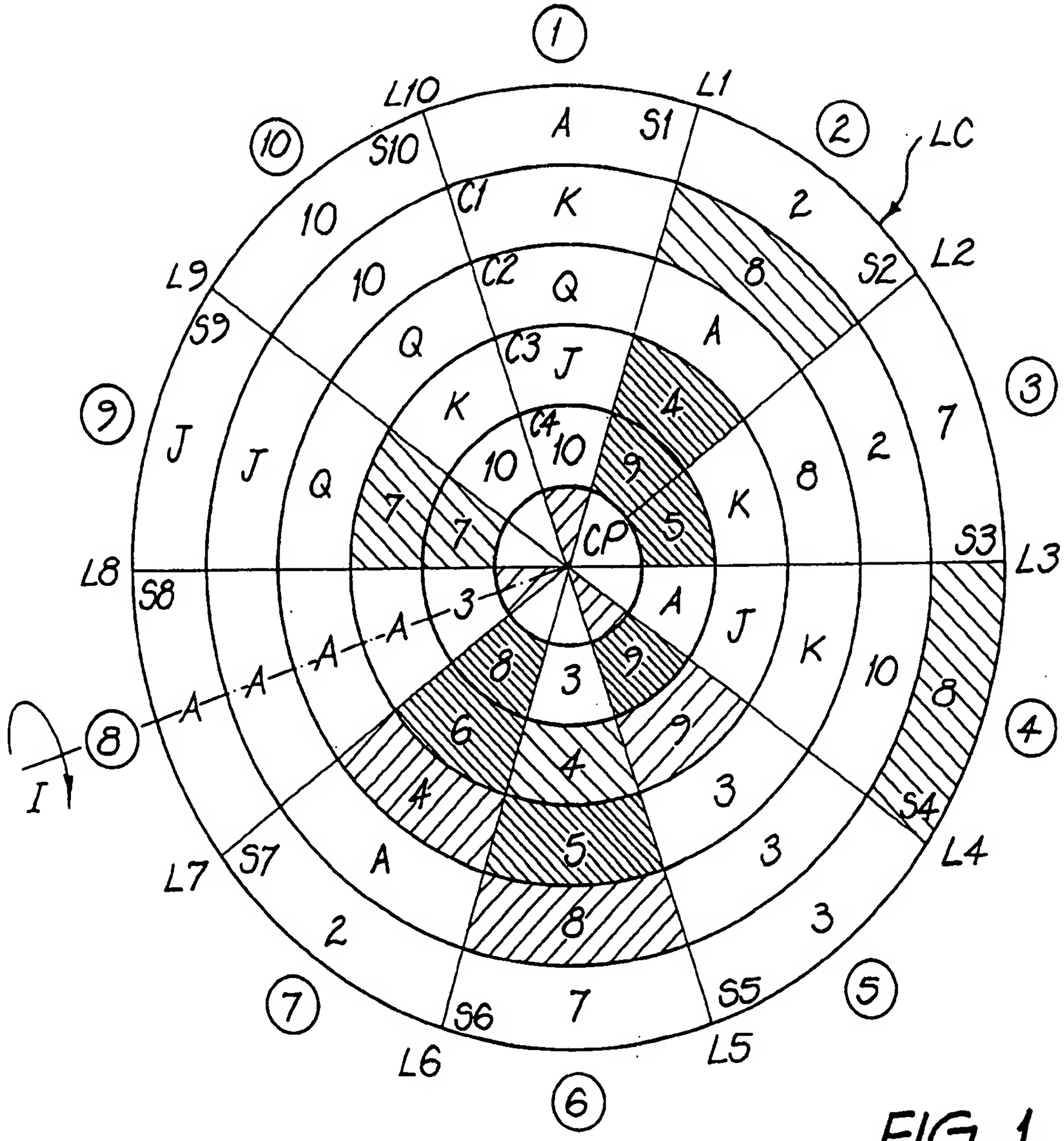
information in each sector being relatively moveable and/or changeable with respect to the reference position and relative to each other sector.

13. Apparatus for displaying information in a gaming machine substantially as herein described with reference to the accompanying drawings.

14. A method for displaying information in a gaming machine substantially as herein described with reference to the accompanying drawings.

DATED this 13th day of January 1997

WILLIAM CLARENCE CAMPBELL
By his Patent Attorneys
GRIFFITH HACK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L5
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L10
LC
S1
S2
S3
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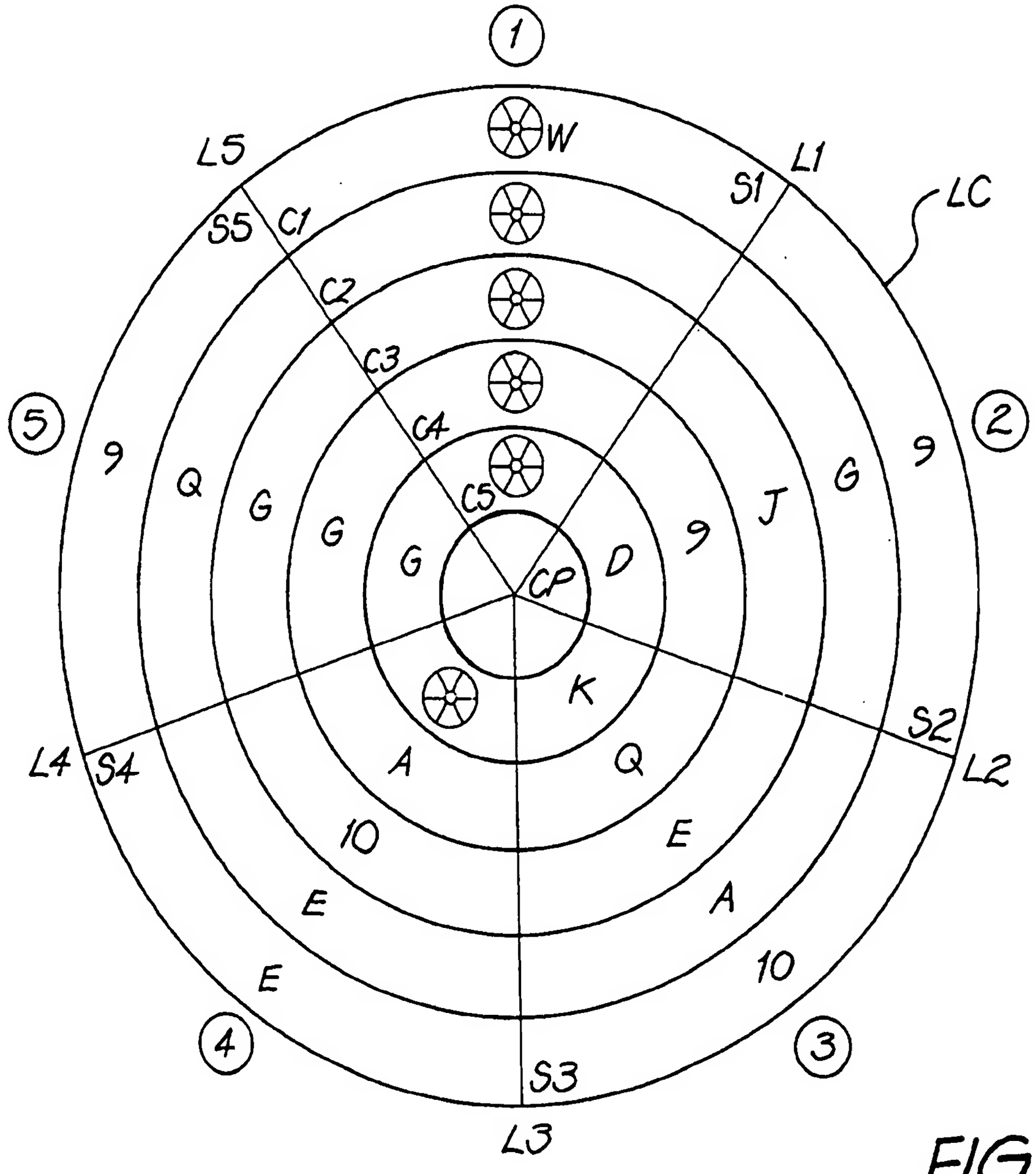
S6
S7
S8
S9
S10
C1
C2
C3
C4
CP
I

FIG. 1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L1
S5
C1
S1
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C2
C3
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2
C4
C5
9
Q
G
G
G
G
9
J
G
9
CP
D
K
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S4
L2
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Q
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E
E
A
E
10
4
3
S3
L3

FIG. 2

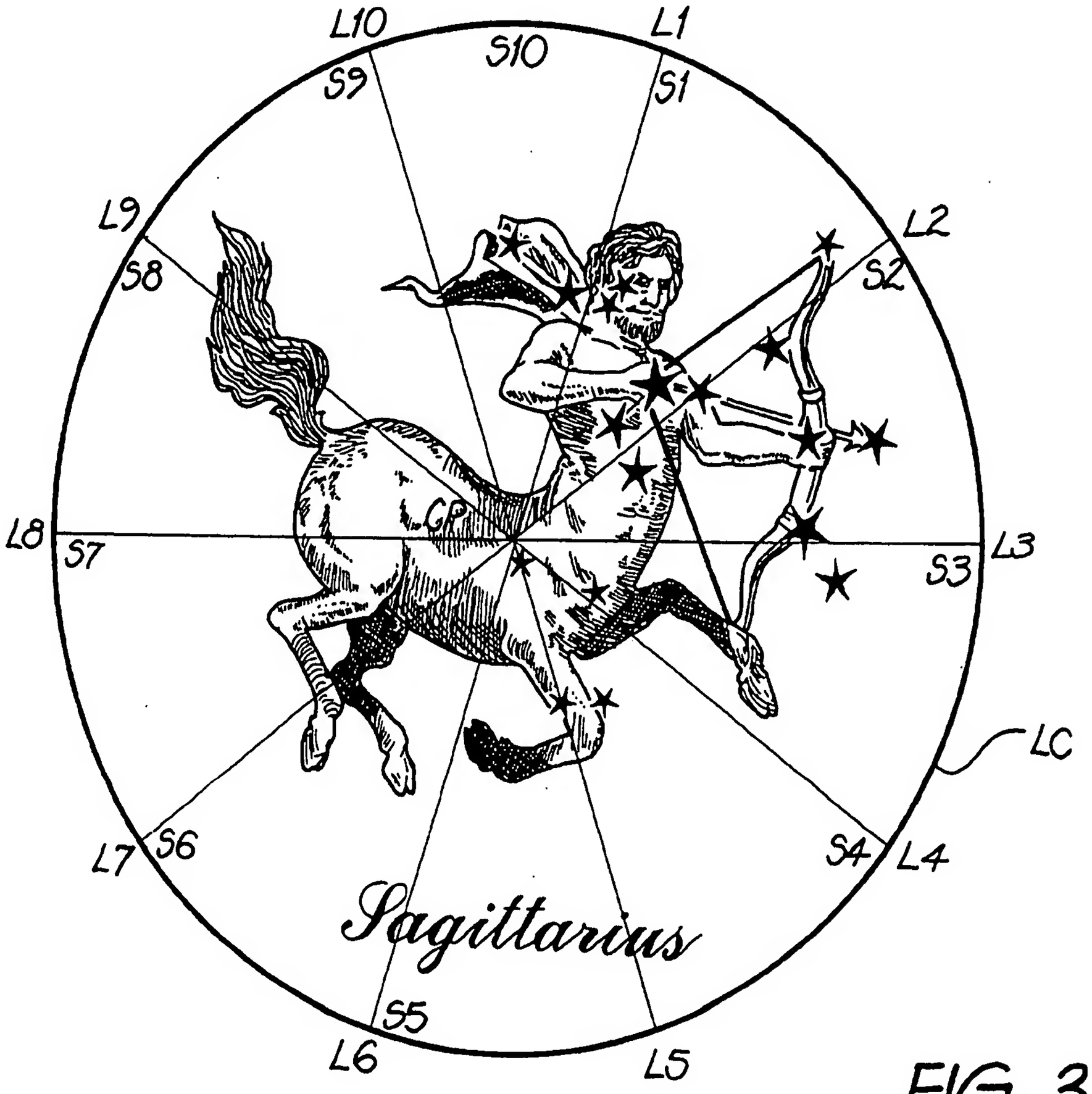

FIG. 3